

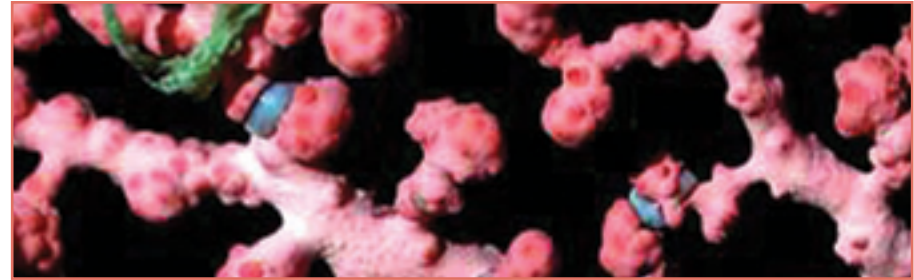
Safeguarding America's Secret Gardens

Deep-sea corals are fragile and tend to grow slowly. Therefore, they are vulnerable to physical damage and are slow to recover from it. Thus, thoughtful actions are required to avoid damage while allowing compatible human uses of ocean resources, such as sustainable fisheries, to continue. As the Deep Sea Coral Research and Technology Program studies the “coral gardens” hidden in the depths of America's oceans, the program's research findings are used in ocean management decisions to enable actions that safeguard these vulnerable ecosystems. An example is unfolding on the west coast:

Examining Deep-Sea Corals as Fish Habitat on the West Coast

NOAA and the Pacific Fishery Management Council manage fishing activities in federal waters off Washington, Oregon, and California, and co-manage the fisheries resources off Washington with the Pacific Northwest coastal treaty tribes. In 2011 the Council began reviewing the 2006 designation of groundfish essential fish habitats (EFH)—areas important to the survival and reproduction of commercially-caught, seafloor-dwelling fish—and management actions associated with these habitats. Some groundfish EFH encompass deep-sea coral and sponge communities, which, like corals, can form complex habitats for fishes and invertebrates.

Among the research funded by the Deep Sea Coral Research and Technology Program, a coordinated suite of studies on the west coast support the Council's work describing, identifying, and conserving groundfish EFH. By locating where deep-sea corals and sponges occur, documenting the species associated with them, and clarifying their importance as habitat to groundfish, these studies will assist the Council in determining EFH boundaries. The designation of deep-sea coral and sponge areas as groundfish EFH, if warranted, would require the Council to consider management actions to protect the areas from disturbance caused by fishing gear. Such measures would be expected to help support a healthy groundfish population. Such designation also allows NOAA to



provide recommendations to other federal agencies to help them protect these sensitive habitats from the impacts of activities like cable-laying and dredging.

Scientists involved in these studies are preparing the following spatial data products to submit to the Council's EFH Review Committee (Figure 2).

- Detailed descriptions of deep-sea coral and sponge communities at sites off California and Washington, including associated fishes, invertebrates, and habitats
- Results of visual surveys of glass sponge habitats and their associated groundfish species
- A compilation of thousands of deep-sea coral locations known to date
- Predictive maps of areas where deep-sea corals are likely to occur
- The geographic extent of bottom trawling
- The amount and distribution of deep-sea coral bycatch in commercial fisheries

Some of these products came from one-year studies that concluded in 2010 and 2011 listed in Figure 1. Others are interim products of the program's three-year field study that started in 2010 to locate deep-sea coral and sponge habitats and to document fish associated with these habitats along the West Coast. The three-year study comprises multibeam, autonomous underwater vehicle (AUV), ROV, and manned submersible surveys and subsequent analyses of the images and samples collected. Although the study is still ongoing, scientists have accelerated their analyses to meet the Council's EFH review schedule.